

Patent Abstracts of Japan

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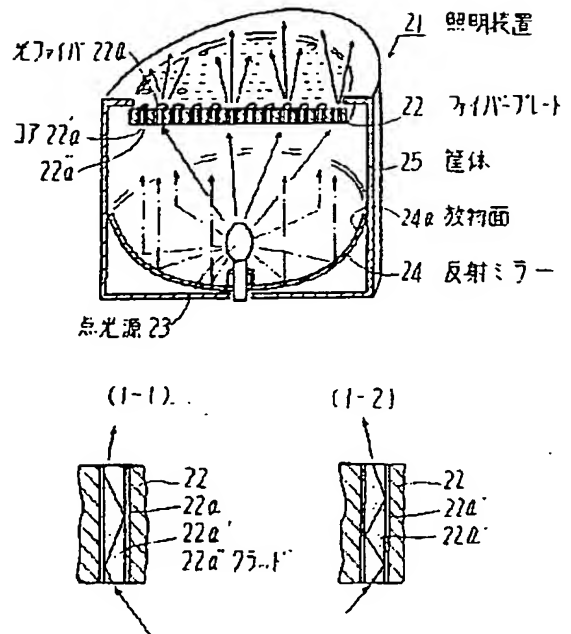
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TITLE : ILLUMINATOR FOR OPTICAL SYSTEM



ABSTRACT : PURPOSE: To obtain the illuminator to form a light beam emitted from a point light source or a surface light source, which has high light transmissivity and can be miniaturized, into uniform diffused light by using a fiber plate constituted by converging optical fibers and slicing them in the shape of a plate.

CONSTITUTION: For a fiber plate 22, the several hundred thousands of optical fibers 22a are converged circularly and adhesively fixed while being mutually adhered through an ultraviolet-curing adhesive agent, etc. Afterwards, they are sliced into the thickness of about 2mm in a direction orthogonal to the optical fibers 22a by a cutting saw, etc. In an illuminator 21 having this constitution, for a light beam emitted from a point light source 23 to the fiber plate 22 side, most of it arrives at the end face of the optical fiber 22a and goes into a core 22a' of the optical fiber 22a while being slightly diffracted on this end face. Then, while repeating full reflection on a boundary face between the core 22a' and a clad 22a', the light beam is emitted from the other end face as the diffused light having the half value width of about 25° without being attenuated.

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